

## LSF-SMD 3.50/10/180 SN BK RL

**Weidmüller Interface GmbH & Co. KG**

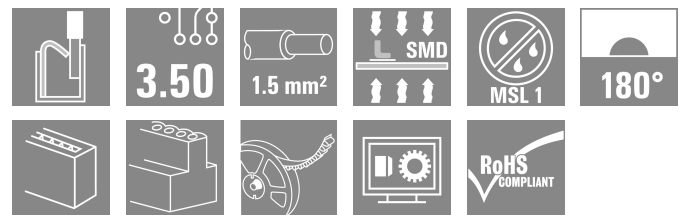
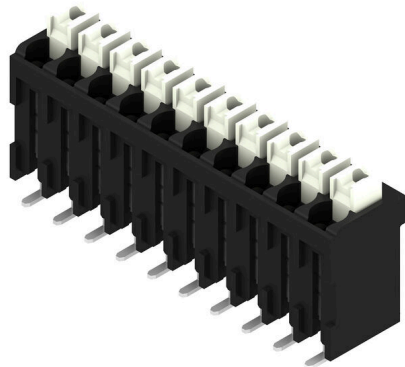
Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)

### Product image



The innovative quick connector - simple, safe and economical:

PCB terminals with spring connection and direct PUSH IN technology. A milestone in connection technology.

Amazingly simple and simply amazing in practice:

- Connect and easily detach solid wires or wires with wire-end ferrules without using tools
- Processed automatically in the reflow or vapour phase
- Potentials and clamping points marked clearly by coloured push buttons

World-class design-in and processing phases, and suitable for a vast range of applications.

PCB terminal for fully automatic assembly using reflow soldering (SMD), with PUSH IN wire connections. Conductor insertion and slider operation from the same direction (TOP).

- Solid & flexible conductors with wire-end ferrules need only to be inserted and they are ready.
- When connecting stranded wires without wire-end ferrules the actuating element is used to open the terminal point
- Intuitive handling – since the wire-entry area and handling area are clearly separated.
- Packaged in tape-on-reel
- Conductor outlet direction 180°

### General ordering data

|              |   |
|--------------|---|
| Version      | Printed circuit board terminals, 3.50 mm, Number of poles: 10, 180°, black, PUSH IN with actuator, Clamping range, max. : 1.5 mm², Tape |
| Order No.    | <a href="#">1250450000</a>  |
| Type         | LSF-SMD 3.50/10/180 SN BK RL  |
| GTIN (EAN)   | 4050118041255   |
| Qty.         | 180 items   |
| Product data | IEC: 320 V / 17.5 A / 0.2 - 1.5 mm²<br>UL: 300 V / 12 A / AWG 24 - AWG 14   |
| Packaging    | Tape  |

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## Technical data

## Approvals

Approvals



ROHS Conform

UL File Number Search [UL Website](#)

Certificate No. (cURus) E60693

## Dimensions and weights

|                          |             |                 |             |
|--------------------------|-------------|-----------------|-------------|
| Depth                    | 10.5 mm     | Depth (inches)  | 0.4134 inch |
| Height                   | 16.3 mm     | Height (inches) | 0.6417 inch |
| Height of lowest version | 16.3 mm     | Width           | 35.7 mm     |
| Width (inches)           | 1.4055 inch | Net weight      | 6.55 g      |

## Temperatures

Continuous operating temp., max. 120 °C

## Environmental Product Compliance

RoHS Compliance Status Compliant without exemption

REACH SVHC No SVHC above 0.1 wt%

## System parameters

|  |                              |  |                       |
|--|------------------------------|--|-----------------------|
| Product family                               | OMNIMATE Signal - series LSF | Wire connection method                     | PUSH IN with actuator |
| Mounting onto the PCB                        | SMD solder connection        | Conductor outlet direction                 | 180°                  |
| Pitch in mm (P)                              | 3.50 mm                      | Pitch in inches (P)                        | 0.138 "               |
| Number of poles                              | 10                           | Pin series quantity                        | 1                     |
| Fitted by customer                           | No                           | Number of rows                             | 1                     |
| Coplanarity:                                 | 100 µm                       | Number of solder pins per pole             | 2                     |
| Stripping length                             | 8 mm                         | L1 in mm                                   | 31.50 mm              |
| L1 in inches                                 | 1.242 "                      | Touch-safe protection acc. to DIN VDE 0470 | IP 20                 |
| Touch-safe protection acc. to DIN VDE 57 106 | Safe from finger touch       | Protection degree                          | IP20                  |
| Volume resistance                            | 1.60 mΩ                      |  |                       |

## Material data

|                                       |          |                                       |                  |
|---------------------------------------|----------|---------------------------------------|------------------|
| Insulating material                   | LCP GF   | Colour                                | black            |
| Colour of operational elements        | white    | Colour chart (similar)                | RAL 9011         |
| Insulating material group             | IIIa     | Comparative Tracking Index (CTI)      | ≥ 175            |
| Moisture Level (MSL)                  | 1        | UL 94 flammability rating             | V-0              |
| Contact material                      | Cu-alloy | Layer structure of solder connection  | 4...6 µm Sn matt |
| Storage temperature, min.             | -40 °C   | Storage temperature, max.             | 70 °C            |
| Operating temperature, min.           | -50 °C   | Operating temperature, max.           | 120 °C           |
| Temperature range, installation, min. | -30 °C   | Temperature range, installation, max. | 120 °C           |

## Conductors suitable for connection

|                      |                      |
|----------------------|----------------------|
| Clamping range, min. | 0.13 mm <sup>2</sup> |
| Clamping range, max. | 1.5 mm <sup>2</sup>  |

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### Technical data

|   |  |  |                               |            |
|---|--|--|-------------------------------|------------|
| Wire connection cross section AWG, min.         | AWG 28                                 |  |                               |            |
| Wire connection cross section AWG, max.         | AWG 14                                 |  |                               |            |
| Solid, min. H05(07) V-U                         | 0.2 mm <sup>2</sup>                    |  |                               |            |
| Solid, max. H05(07) V-U                         | 1.5 mm <sup>2</sup>                    |  |                               |            |
| Flexible, min. H05(07) V-K                      | 0.2 mm <sup>2</sup>                    |  |                               |            |
| Flexible, max. H05(07) V-K                      | 1.5 mm <sup>2</sup>                    |  |                               |            |
| w. plastic collar ferrule, DIN 46228 pt 4, min. | 0.25 mm <sup>2</sup>                   |  |                               |            |
| w. plastic collar ferrule, DIN 46228 pt 4, max. | 0.75 mm <sup>2</sup>                   |  |                               |            |
| w. wire end ferrule, DIN 46228 pt 1, min.       | 0.25 mm <sup>2</sup>                   |  |                               |            |
| w. wire end ferrule, DIN 46228 pt 1, max.       | 1.5 mm <sup>2</sup>                    |  |                               |            |
| Clampable conductor                             | Cross-section for conductor connection | Type                                   | fine-wired                    |            |
|   |  | nominal                                | 0.25 mm <sup>2</sup>          |            |
|   | wire end ferrule                       | Stripping length                       | nominal                       | 10 mm      |
|   |  | Recommended wire-end ferrule           | <a href="#">H0,25/12 HBL</a>  |            |
|   |  | Cross-section for conductor connection | Type                          | fine-wired |
|   | nominal                                |  | 0.34 mm <sup>2</sup>          |            |
|   | wire end ferrule                       | Stripping length                       | nominal                       | 10 mm      |
|   |  | Recommended wire-end ferrule           | <a href="#">H0,34/12 TK</a>   |            |
|   |  | Cross-section for conductor connection | Type                          | fine-wired |
|   | nominal                                |  | 0.5 mm <sup>2</sup>           |            |
|   | wire end ferrule                       | Stripping length                       | nominal                       | 10 mm      |
|   |  | Recommended wire-end ferrule           | <a href="#">H0,5/14 OR</a>    |            |
|   |  | Cross-section for conductor connection | Type                          | fine-wired |
|   | nominal                                |  | 0.75 mm <sup>2</sup>          |            |
|   | wire end ferrule                       | Stripping length                       | nominal                       | 10 mm      |
|   |  | Recommended wire-end ferrule           | <a href="#">H0,75/14T HBL</a> |            |

Reference text Length of ferrules is to be chosen depending on the product and the rated voltage., The outside diameter of the plastic collar should not be larger than the pitch (P)

### Rated data acc. to IEC

|   |                        |   |                  |
|---|------------------------|---|------------------|
| tested acc. to standard   | IEC 60664-1, IEC 61984 | Rated current, min. number of poles (Tu=20°C)                         | 17.5 A           |
| Rated current, max. number of poles (Tu=20°C)                             | 16 A                   | Rated current, min. number of poles (Tu=40°C)                         | 17.5 A           |
| Rated current, max. number of poles (Tu=40°C)                             | 14 A                   | Rated voltage for surge voltage class / pollution degree II/2         | 320 V            |
| Rated voltage for surge voltage class / pollution degree III/2            | 160 V                  | Rated voltage for surge voltage class / pollution degree III/3        | 160 V            |
| Rated impulse voltage for surge voltage class/ pollution degree II/2      | 2.5 kV                 | Rated impulse voltage for surge voltage class/ pollution degree III/2 | 2.5 kV           |
| Rated impulse voltage for surge voltage class/ contamination degree III/3 | 2.5 kV                 | Short-time withstand current resistance                               | 3 x 1s with 80 A |

### Rated data acc. to CSA

|                                   |        |                                   |                |
|-----------------------------------|--------|-----------------------------------|----------------|
| Institute (CSA)                   | CSA    | Certificate No. (CSA)             | 200039-1664286 |
| Rated voltage (Use group B / CSA) | 300 V  | Rated voltage (Use group D / CSA) | 300 V          |
| Rated current (Use group B / CSA) | 10 A   | Rated current (Use group D / CSA) | 10 A           |
| Wire cross-section, AWG, min.     | AWG 28 | Wire cross-section, AWG, max.     | AWG 14         |

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Reference to approval values      Specifications are maximum values, details - see approval certificate.

### Rated data acc. to UL 1059

|                                       |  |                                       |        |
|---------------------------------------|--|---------------------------------------|--------|
| Institute (cURus)                     | CURUS  | Certificate No. (cURus)               | E60693 |
| Rated voltage (Use group B / UL 1059) | 300 V  | Rated voltage (Use group D / UL 1059) | 300 V  |
| Rated current (Use group B / UL 1059) | 12 A   | Rated current (Use group D / UL 1059) | 10 A   |
| Wire cross-section, AWG, min.         | AWG 24   | Wire cross-section, AWG, max.         | AWG 14 |
| Reference to approval values          | Specifications are maximum values, details - see approval certificate. |                                       |        |

### Packing

|                                |                           |   |           |
|--------------------------------|---------------------------|---|-----------|
| ESD Level packaging            | static dissipative        | Packaging   | Tape      |
| VPE length                     | 332.00 mm                 | VPE width   | 332.00 mm |
| VPE height                     | 63.00 mm                  | Tape depth (T2)                                   | 17.60 mm  |
| Tape width (W)                 | 56 mm                     | Tape pocket depth (K0)                            | 17.10 mm  |
| Tape pocket height (A0)        | 11.20 mm                  | Tape pocket width (B0)                            | 43.70 mm  |
| Tape pocket separation (P1)    | 20.00 mm                  | Tape hole separation (E)                          | 1.75 mm   |
| Tape pocket separation (F)     | 26.20 mm                  | Tape reel diameter $\phi$ (A)                     | 330 mm    |
| Surface resistance             | $R_s = 109 - 1012 \Omega$ | Width Pick & Place Pad (WPPP)                     | 7.5 mm    |
| Length Pick & Place Pad (LPPP) | 8.5 mm                    | Diameter of the withdrawal surface ( $\phi$ Dmax) | 9 mm      |

### Type tests

|   |   |  |                               |
|---|---|--|-------------------------------|
| Test: Durability of markings                              | Test  | mark of origin, type identification, pitch, approval marking UL, durability        |                               |
| Test: Clampable cross section                             | Standard                                      | DIN EN 60999-1 section 7 and 9.1 / 12.00, DIN EN 60947-1 section 8.2.4.5.1 / 12.02 |                               |
|   | Conductor type                                | Type of conductor and conductor cross-section                                      | solid 0.14 mm <sup>2</sup>    |
|   |   | Type of conductor and conductor cross-section                                      | stranded 0.14 mm <sup>2</sup> |
|   |   | Type of conductor and conductor cross-section                                      | solid 1.5 mm <sup>2</sup>     |
|   |   | Type of conductor and conductor cross-section                                      | stranded 1.5 mm <sup>2</sup>  |
|   |   | Type of conductor and conductor cross-section                                      | AWG 24/1                      |
|   |   | Type of conductor and conductor cross-section                                      | AWG 22/19                     |
|   |   | Type of conductor and conductor cross-section                                      | AWG 16/1                      |
|   | Type of conductor and conductor cross-section | AWG 16/19  |                               |
| Evaluation  | passed  |  |                               |
| Test for damage to and accidental loosening of conductors | Standard                                      | DIN EN 60999-1 section 9.4 / 12.00   |                               |
|   | Requirement                                   | 0.2 kg   |                               |

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**Technical data**

|                |   |   |                               |
|----------------|---|---|-------------------------------|
|                | Conductor type                                | Type of conductor and conductor cross-section | AWG 24/1                      |
|                |   | Type of conductor and conductor cross-section | AWG 24/19                     |
|                | Evaluation                                    | passed  |                               |
|                | Requirement                                   | 0.3 kg  |                               |
|                | Conductor type                                | Type of conductor and conductor cross-section | stranded 0.25 mm <sup>2</sup> |
|                |   | Type of conductor and conductor cross-section | solid 0.5 mm <sup>2</sup>     |
|                | Evaluation                                    | passed  |                               |
|                | Requirement                                   | 0.4 kg  |                               |
|                | Conductor type                                | Type of conductor and conductor cross-section | solid 1.5 mm <sup>2</sup>     |
|                |   | Type of conductor and conductor cross-section | stranded 1.5 mm <sup>2</sup>  |
|                |   | Type of conductor and conductor cross-section | AWG 16/1                      |
|                |   | Type of conductor and conductor cross-section | AWG 16/19                     |
| Evaluation     | passed  |   |                               |
| Standard       | DIN EN 60999-1 section 9.5 / 12.00            |   |                               |
| Requirement    | ≥10 N   |   |                               |
| Conductor type | Type of conductor and conductor cross-section | AWG 24/1                                      |                               |
|                | Type of conductor and conductor cross-section | AWG 24/19                                     |                               |
| Evaluation     | passed  |   |                               |
| Requirement    | ≥20 N   |   |                               |
| Conductor type | Type of conductor and conductor cross-section | stranded 0.25 mm <sup>2</sup>                 |                               |
|                | Type of conductor and conductor cross-section | H05V-U0.5                                     |                               |
| Evaluation     | passed  |   |                               |
| Requirement    | ≥40 N   |   |                               |
| Conductor type | Type of conductor and conductor cross-section | H07V-U1.5                                     |                               |
|                | Type of conductor and conductor cross-section | H07V-K1.5                                     |                               |
|                | Type of conductor and conductor cross-section | AWG 16/1                                      |                               |
|                | Type of conductor and conductor cross-section | AWG 16/19                                     |                               |
| Evaluation     | passed  |   |                               |

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**Technical data**

**Important note**

IPC conformity      Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products can be evaluated on request.

- Notes
- Additional push button colours on request
  - Operating force of slider max. 40 N
  - Rated current related to rated cross-section & min. No. of poles.
  - Wire end ferrule with plastic collar to DIN 46228/4
  - Wire end ferrule without plastic collar to DIN 46228/1
  - P on drawing = pitch
  - Rated data refer only to the component itself. Clearance and creepage distances to other components are to be designed in accordance with the relevant application standards.
  - Crimping shape "A" for wire end ferrules with PZ 6/5 crimping tool recommended.
  - Long term storage of the product with average temperature of 50 °C and maximum humidity 70%, 36 months

**Classifications**

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| ETIM 8.0    | EC002643    | ETIM 9.0    | EC002643    |
| ETIM 10.0   | EC002643    | ECLASS 14.0 | 27-46-01-01 |
| ECLASS 15.0 | 27-46-01-01 |             |             |

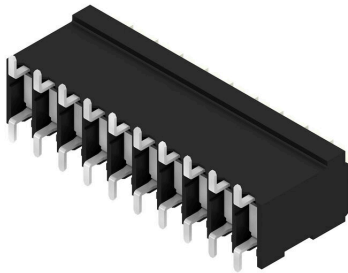
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Drawings

Product image



Dimensional drawing



Graph



Graph



Product benefits



Stable solder connection

Product benefits



PUSH IN wire connection

Product benefits

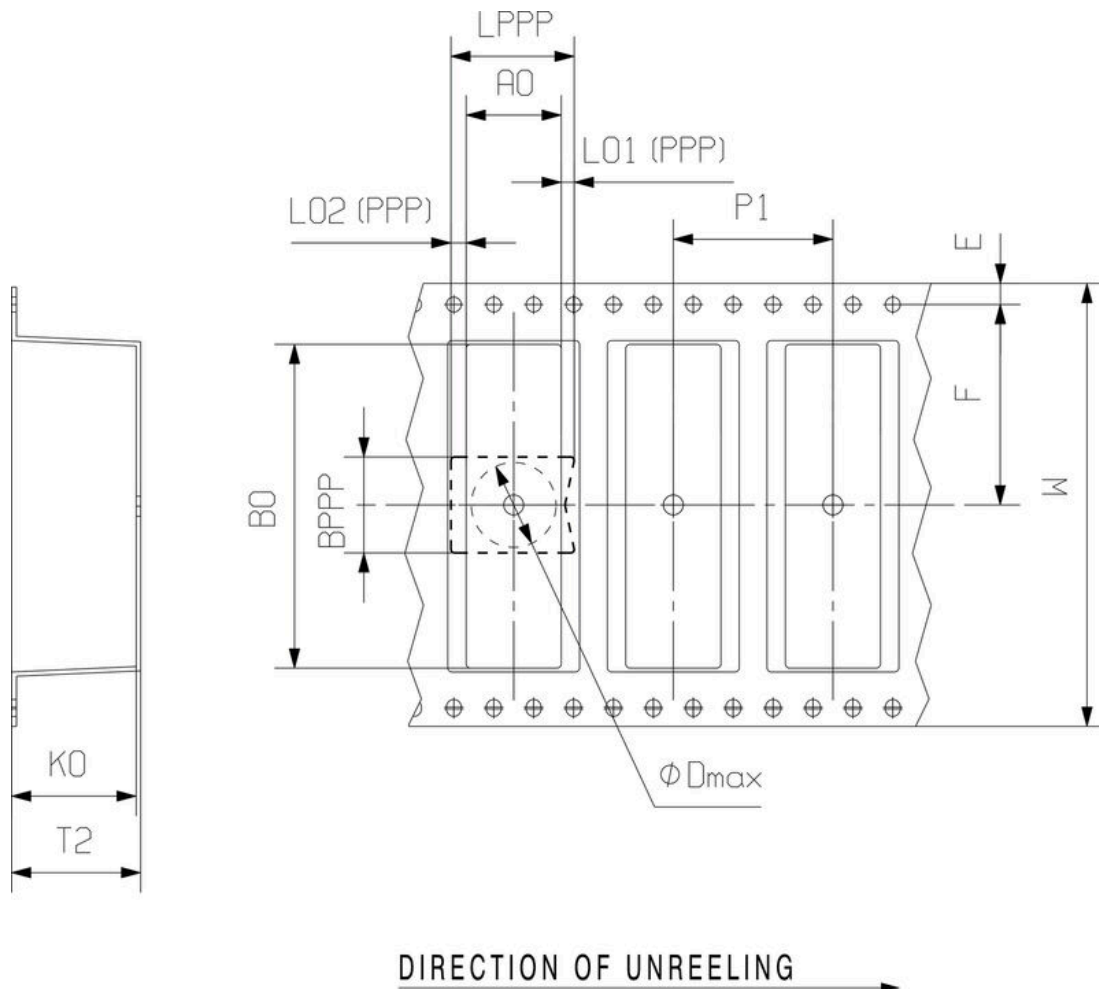
Dimensional drawing



Packaged in tape-on-reel



Dimensional drawing



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**Accessories****Slotted screwdriver**

VDE insulated slot-head screwdriver, SDI DIN 7437, ISO 2380/2, drive output acc. to DIN 5264, ISO 2380/1.  
SoftFinish grip

**General ordering data**

|            |                            |                          |  |
|------------|----------------------------|--------------------------|--|
| Type       | SDIS 0.4X2.5X75            | Version                  |  |
| Order No.  | <a href="#">9008370000</a> | Screwdriver, Screwdriver |  |
| GTIN (EAN) | 4032248056330              |                          |  |
| Qty.       | 1 ST                       |                          |  |
| Type       | SDS 0.4X2.5X75             | Version                  |  |
| Order No.  | <a href="#">9009030000</a> | Screwdriver, Screwdriver |  |
| GTIN (EAN) | 4032248266944              |                          |  |
| Qty.       | 1 ST                       |                          |  |